

IN THE CLAIMS

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8/20/03
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1. (Currently Amended) An apparatus for encoding realtime and non-realtime contents, the apparatus comprising:
- a non-realtime content source configured to provide non-realtime content;
 - a non-realtime encoder coupled to the non-realtime content source and configured to encode the non-realtime content into encoded non-realtime content;
 - a realtime content source configured to provide realtime content;
 - a realtime encoder coupled to the realtime content source and configured to encode the realtime content into encoded realtime content for storing said realtime content in a grid page database wherein said realtime content comprises intra-coded slices and predictively-coded slices stored separately within said grid page database; fig 4
 - a remultiplexer operatively coupled to the non-realtime encoder and the realtime encoder and configured to repacketize the encoded non-realtime content and the encoded realtime content into transport packets suitable for transmission in a transport stream; and
 - a re-timestamp unit coupled to the remultiplexer and configured to provide timestamps to be applied to the transport packets in order to synchronize the realtime and non-realtime contents.
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2. (Previously Amended) The apparatus of claim 1, where the apparatus is located within a head-end of a cable distribution system.
3. (Previously Amended) The apparatus of claim 1, further comprising:
- a clock unit configured to provide a clock signal to the re-timestamp unit and to generate a clock stream to be transmitted along with the transport stream to a plurality of terminals.

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4. (Previously Amended) The apparatus of claim 1, further comprising:
a rate control unit configured to determine an encoding rate for the non-realtime content and to provide the determined encoding rate for the non-realtime content to the non-realtime encoder.
5. (Previously Amended) The apparatus of claim 4, where encoding rate for the non-realtime content is determined based at least in part on an output rate of the transport stream.
6. (Previously Amended) The apparatus of claim 4, where the rate control unit determines an encoding rate for the realtime content based at least in part on an output rate of the transport stream.
7. (Previously Added) The apparatus of claim 1, wherein the realtime content includes video and audio contents.
8. (Previously Added) The apparatus of claim 1, wherein the non-realtime content includes guide data.
9. (Previously Added) The apparatus of claim 7, wherein the realtime encoder includes
a video encoder configured to encode the realtime video content, and
an audio encoder configured to encode the realtime audio content.
10. (Previously Added) The apparatus of claim 5, wherein the encoding rate for the non-realtime content is further determined based on a maximum bit rate anticipated for the encoded realtime content.
11. (Previously Added) The apparatus of claim 1, wherein the timestamps provided by the re-timestamp unit replace timestamps generated by the realtime and non-realtime encoders.

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12. (Previously Added) The apparatus of claim 1, further comprising:
a slice combiner coupled to the realtime and non-realtime encoders and the remultiplexer, the slice combiner configured to combine slices of encoded realtime content with slices of encoded non-realtime content.
13. (Previously Added) The apparatus of claim 1, wherein realtime and non-realtime contents intended to be displayed in a single frame are re-timestamped by the re-timestamp unit such that the contents are decoded and presented in the same frame.
14. (Currently Amended) A method for encoding realtime and non-realtime contents, comprising:
encoding realtime content to generate encoded realtime content for storing said realtime content in a grid page database wherein said realtime content comprises intra-coded slices and predictively-coded slices stored separately within said grid page database;
encoding non-realtime content to generate encoded non-realtime content;
repacketizing the encoded realtime content and the encoded non-realtime content into transport packets suitable for transmission in a transport stream; and
re-timestamping the transport packets with new timestamps in order to synchronize the realtime and non-realtime contents.
15. (Previously Added) The method of claim 14, further comprising:
generating the new timestamps based on a common clock signal.
16. (Previously Added) The method of claim 14, further comprising:
controlling a bit rate for the encoded non-realtime content based in part on a bit rate for the transport stream.

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17. (Previously Added) The method of claim 16, wherein the bit rate for the encoded non-realtime content is further based on a maximum bit rate anticipated for the encoded realtime content.

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18. (Previously Added) The method of claim 16, further comprising:
allocating the bit rate for the encoded non-realtime content among a plurality of pages of non-realtime content.

19. (Previously Added) The method of claim 14, further comprising:
combining slices of encoded realtime content with slices of encoded non-realtime content, and
wherein the repacketizing is based on the combined slices of encoded realtime and non-realtime contents.

20. (Withdrawn)

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